Kuta Software - Infinite Algebra 2

Name_____

The Rational Root Theorem WS #2

Date_____ Period____

State the possible rational zeros for each function.

1) $f(x) = 3x^2 + 2x - 1$

2) $f(x) = x^6 - 64$

3) $f(x) = x^2 + 8x + 10$

4) $f(x) = 5x^3 - 2x^2 + 20x - 8$

5) $f(x) = 4x^5 - 2x^4 + 30x^3 - 15x^2 + 50x - 25$

6) $f(x) = 5x^4 + 32x^2 - 21$

7) $f(x) = x^3 - 27$

8) $f(x) = 2x^4 - 9x^2 + 7$

State the possible rational zeros for each function. Then find all rational zeros.

9) $f(x) = x^3 + x^2 - 5x + 3$

10) $f(x) = x^3 - 13x^2 + 23x - 11$

11) $f(x) = x^3 + 4x^2 + 5x + 2$

12) $f(x) = 5x^3 + 29x^2 + 19x - 5$

13) $f(x) = 4x^3 - 9x^2 + 6x - 1$

14) $f(x) = 3x^3 + 11x^2 + 5x - 3$

15) $f(x) = 5x^4 - 46x^3 + 84x^2 - 50x + 7$

16) $f(x) = 3x^4 - 10x^3 - 24x^2 - 6x + 5$

17) $f(x) = 3x^3 + 9x^2 + 4x + 12$

18) $f(x) = 2x^3 + 9x^2 + 19x + 15$

Critical thinking question:

19) In the process of solving $2x^3 + 7x^2 + 9x + 10 = 0$ you test 1, 2, 5, and 10 as possible zeros and determine that none of them are actual zeros. You then discover that $-\frac{5}{2}$ is a zero. You calculate the depressed polynomial to be $2x^3 + 2x + 4$. Do you need to test 1, 2, 5, and 10 again? Why or why not?